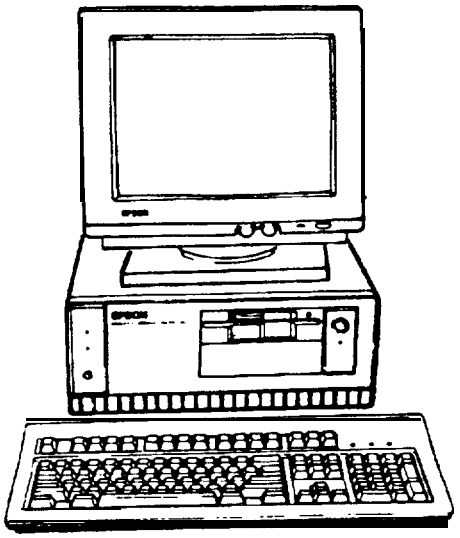


Computer Specifications

CPU and Memory	
CPU	80386SX microprocessor, 20 MHz system clock speed, 20 MHz or simulated 8 MHz processor sped, selectable through software or keyboard command
	0 wait state memory access speed at 20 MHz
System memory	2MB RAM standard; base memory of 640KB
	Memory expandable using 256KB, 1MB, or 4MB SIMMs up to 14MB (maximum); SIMMs must be fast-page mode, 8ons access speed (or faster)
ROM	128KB (includes system BIOS and VGA BIOS)
Shadow RAM	0 wait state access speed; automatically copies both ROM BIOS and video ROM into RAM
Cache controller	A38202SX (20MHz) standard
Cache RAM	32KB high-speed (25ns) static RAM
Math coprocessor (optional)	80387SX (20 MHz) support
Clock/calendar	Real-time clock, calendar, and 114-byte CMOS RAM for configuration; battery backup
Controllers	
Diskette	supports up to two drive in any of four formats: 5 1/4-inch, highdensity, 1.2MB; 5 1/4-inch, double-density, 360KB; 3 1/2-inch, high-density, 1.44MB; or 3 1/2-inch, double-density, 720KB; controller on main system board
Hard disk	supports up to two half-height drives; embedded controller; interface on main system board
Interfaces	
Monitor	VGA adapter with 512KB DRAM (video memory) built into main system board; supports up to 800 x 600 pixels in 16-colors or up to 640 x 480 pixels in 256-colors; multi-frequency monitor required for resolutions over 640 x 480
	15-pin, D-shell connector
serial	RS-232C, programmable, asynchronous; 9-pin, D-shell connector
Parallel	Standard 8-bit parallel, mono-directional; 25-pin, D-shell connector
Mouse port	Mini DIN, 6-pin connector for PS/2 compatible mouse or other device
Keyboard	Mini DIN, 6-pin connector for PS/2 compatible keyboard
option slots	Four standard input/output expansion slots (three 16-bit ISA compatible and one &bit ISA compatible); 8 MHz bus speed
Speaker-	Internal; operation controllable by software
Power Supply	
Type	140W, fan-cooled, automatic (worldwide) input voltage sensing
Input ranges	98 to 132 VAC and 195 to 264 VAC
Maximum outputs	+5 VDC at 18 Amps, +12 VDC at 4.2 Amps
	–12 VDC at 0.3 Amps, –5 VDC at 03 Amps
	+12 VDC at 6 Amps, peak (10 seconds)
Mass Storage	
	Up to three half-height drives maximum (one vertical mount and two horizontal mounts) configurable using any of the following drive types (only horizontal mounts can be accessed externally):
Diskette drives	5 1/4-inch diskette drive, 1.2MB (high-density) storage capacity
	3 1/2-inch diskette drive, 1.44MB (high-density) storage capacity
	5 1/4-inch diskette drive, 360KB (double-density) storage capadty
	3 1/2-inch diskette drive, 720KB (double-density) storage capacity
Hard disk drives	3 1/2-inch form factor hard disk drive(s); up to half-height size; first drive mounted vertically, second mounted horizontally

Keyboard

	Detachable, two position, 101 sculpted keys
Layout	58-key QWERTY main keyboard; 17-key numeric/cursor pad; 10 cursor keys; additional 4-key cursor pad; 16 function keys (user-definable)
Function	Four levels (normal, shift, control, alternate); user-definable

Environmental Requirements

Condition	Operating range	Non-operating range	Storage range
Temperature	41° to 95° F (5° to 35° C)	-4° to 140° F (-20° to 60° C)	-40° to 140° F (-40° to 60° C)
Humidity (non-condensing)	20% to 80%	10% to 90%	5% to 95%
Altitude	-330 to 9900 ft (-100 to 3000 m)	-330 to 11880 ft (-100 to 3600 m)	-330 to 39600 ft (-100 to 12000 m)
Maximum wet bulb	68° F (20° C)	104° F (40° C)	134° F (57° C)

Physical Characteristics

Width	15 inches (374 mm)
Depth	16.75 inches (419 mm)
Height	6 inches (151 mm)
weight (without keyboard)	Single diskette drive model: 20.75 lb (9.4 kg)

Connector Pin Assignments

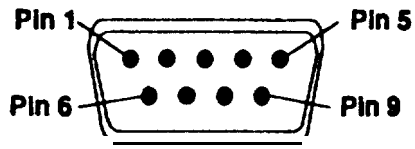
Parallel Port Connector (CN5)

Parallel Port Connector Pin Assignments

Pin	Signal	Pin	Signal	Pin	Signal
1	STROBE	10	ACK*	19	SIGNAL GND
2	DATA0	11	BUSY	20	SIGNAL GND
3	DATA1	12	PE	21	SIGNAL GND
4	DATA2	13	SELECT	22	SIGNAL GND
5	DATA3	14	AUTO*	23	SIGNAL GND
6	DATA4	15	ERROR*	24	SIGNAL GND
7	DATA5	16	INIT*	25	SIGNAL GND
8	DATA6	17	SELECTIN*		
9	DATA7	18	SIGNAL GND		

*Active Low Logic

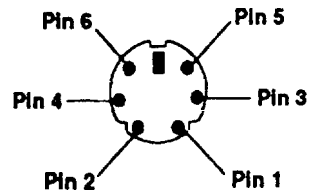
Serial Port Connector (CN4)



Serial Port Connector Pin Assignments

Pin	Signal	Pin	Signal
1	Data Carrier Detect	a	Data Set Ready
2	Receive Data	7	Request To Send
3	Transmit Data	8	Clear To Send
4	Data Terminal Ready	9	Ring Indicator
5	Not Used		

Keyboard and Mouse Connector



Although the keyboard and mouse connectors are physically identical, they cannot be used interchangeably.

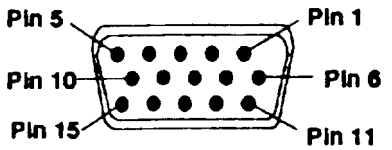
Keyboard Connector Pin Assignments

Pin	Signal
1	Keyboard Data
2	Reserved
3	Ground
4	+5 VDC
5	Keyboard Clock
6	Reserved

Mouse Connector Pin Assignments

Pin	Signal
1	Mouse Data
2	Reserved
3	Ground
4	+5VDC (fused)
5	Mouse Clock
6	Reserved

VGA Connector (CN-3)



VGA Connector Pin Assignments

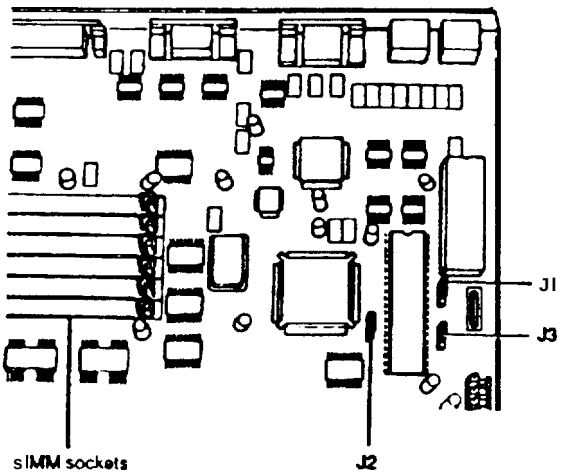
Pin	Signal	Pin	Signal
1	Red Video	9	Key
3	Green Video	10	Sync Return
3	Blue Video	11	Reserved
4	Unused	12	Reserved
5	Ground	13	Horizontal sync
6	Red Return	14	Vertical Sync
7	Green Return	15	Unused
8	Blue Return		

Hardware Interrupts

CTRL1	CTRL2	FUNCTION
IRQ0		Timer Output 0
IRQ1		Keyboard
IRQ2		Interrupt from Controller 2
IRQ3		Serial port 2
IRQ4		Serial port 1
IRQ5		Parallel port 2
IRQ6		Floppy disk interrupt
IRQ7		Parallel port 1
	IRQ8	RTC interrupt
	IRQ9	Software redirected to IRQ2
	IRQ10	Reserved
	IRQ11	Reserved
	IRQ12	Mouse, pointing device
	IRQ13	Coprocessor
	IRQ14	Hard dak controller
	IRQ15	Reserved

Jumper Settings

The illustration Wow shows the locations of the jumpers on the main system board.



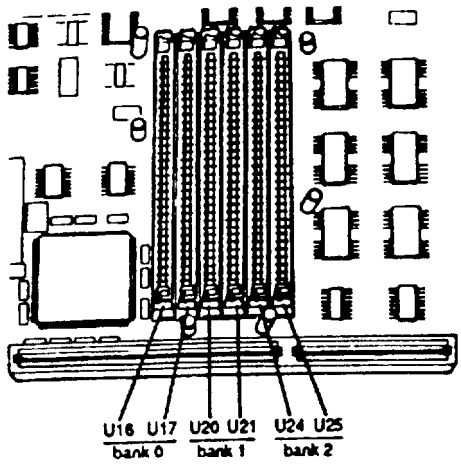
System Board Jumper Settings

Jumper number	Jumpers setting	Function
J1	A B	Color monitor is installed Monochrome monitor is installed
J2	A B	Enables the built-in VGA display adapter Disables the built-in VGA display adapter so you can use a display adapter on an option card in your computer as your primary adapter
J3	A* B	Enables the power-on password Disables the power-on password

* Factory settings

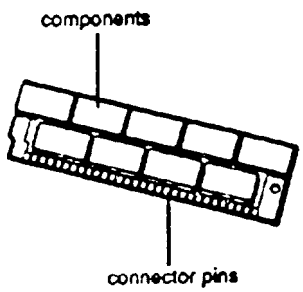
SIMM Installation

The sockets are labelled as shown below.



If an option card is blocking access to the SIMM sockets, remove the option card(s).

Hold the SIMM so the component side is facing the computer s back panel and the metal connector pins are facing down.



Installing Memory Modules

There are six SIMM sockets on the main system board organized in three banks consisting of two sockets each Each socket can contain one SIMM.

You must fill the sockets in any bank you use with the same type of SIMM. The type of SIMMs you can install are 256KB, 1MB, or 4MB.

You can install SIMMs for a total of 12MB of additional memory, which brings your system total to 14MB of on-board memory. To install the maximum amount of on-board memory, you would install the following SIMMs in the three banks:

Bank 0	Bank 1	Bank 2
4MB 4MB	1MB 1MB	1MB 1MB

The following is another example of an additional memory configuration

Bank 0	Bank 1	Bank 2
1MB 1MB	256KB 256KB	1MB 1MB

This configuration adds 4MB plus 512KB for a total 6MB plus 512KB of on-board memory.

Note:
When installing SIMMs, the only constraint is that you must install the same type of SIMM in both slots of a bank.

DMA Channels

Channel	Function
0 (CTRL 1)	Spare
1 (CTRL 1)	SDLC
2 (CTRL 1)	Floppy disk drive controller
3 (CTRL 1)	Spare
4 (CTRL 2)	Cascade for CTRL 1
5 (CTRL 2)	Spare
6 (CTRL 2)	Spare
7 (CTRL 2)	Spare

Hard Disk Drive Types

The following table lists the types of hard disk drives you can use in your computer. Check this tile and the documentation supplied with your hard disk to find the correct number for the type of hard disk drive(s) installed in your computer. You need to enter this number when you set the hard disk drive configuration in the Setup program.

Hard disk drive types

Type no.	Type	Cylinders	Heads	Sectors	Precomp	Landing zone	MB	Drive name
00								No fixed disk
01	ST-506	306	4	17	128	305	10.2	(Used by ESDI)
02	ST-506	615	4	17	300	615	20.4	(1)
03	ST-506	615	6	17	300	615	30.6	
04	ST-506	940	8	17	512	940	62.4	
05	ST-506	940	6	17	512	940	46.8	
06	ST-506	615	4	17	—	615	20.4	
07	ST-506	462	8	17	256	511	30.7	
08	ST-506	733	5	17	I-	733	30.4	
09	ST-506	900	15	17	—	901	112.1	
10	ST-506	820	3	17	—	820	20.4	
11	ST-506	855	5	17	—	855	35.5	
12	ST-506	855	7	17	—	855	49.7	
13	ST-506	306	8	17	128	319	10.3	
14	ST-506	733	7	17	—	733	4.6	
15								-Reserved-
16	ST-506	612	4	17	0	663	20.3	
17	ST-506	977	6	17	300	977	40.5	CDC 94205-51 (2)
18	ST-506	977	7	17	—	977	56.8	
19	ST-506	1024	7	17	512	1023	59.5	
20	ST-506	733	5	17	300	732	30.4	Toshiba MK-133FA
21	ST-506	733	7	17	300	732	42.6	Toshiba MK-134FA
22	ST-506	733	5	17	300	733	30.4	
23	ST-506	306	4	17	0	336	10.2	
24	ST-506	612	4	17	305	663	20.4	
25	ST-506	306	4	17	—	340	10.2	
26	ST-506	612	4	17	—	670	20.4	
27	ST-506	698	7	17	300	732	40.6	
28	ST-506	976	5	17	488	977	40.5	
29	ST-506	306	4	17	0	340	10.2	

Hard disk drive types (continued)

Type no.	Type	Cylinders	Heads	Sectors	Precomp	Landing zone	MB	Drive name
30	ST-506	611	4	17	306	663	20.4	
31	ST-506	732	7	17	300	732	42.6	
32	ST-506	1023	5	17	—	1023	42.5	
33-40								None
41	ESDI	1022	5	34	—	1022	84.8	CDC 94216-106 (3)
42	ESDI	1022	5	36	—	1022	89.8	CDC 94216-106
43	ST-506	1024	8	17	512	1023	68.0	(4)
44	ESDI	828	10	34	—	828	137.5	Toshiba MK-156F
45	ST-506	1024	5	17	512	1023	42.5	(5)
46	ST-506	615	8	17	128	618	40.8	NEC D5147H
47								None
48	ST-506	820	6	17	—	820	40.8	Seagate ST251
49	ST-506	830	10	17	—	830	68.9	Toshiba MK56FB
50	ST-506	1024	9	17	—	1023	76.5	Seagate ST4096
51	ESDI	828	7	34	—	828	96.2	Toshiba MK-154F
52	ESDI	967	5	36	—	967	85.0	CDC 94166-101
53	ESDI	967	7	36	—	967	119.0	CDC 94166-141
54	ESDI	967	9	36	—	967	153.0	CDC 94166-182
55	ESDI	1022	7	34	—	1022	118.8	Micropolis 1354A
56	ESDI	967	5	34	—	967	80.3	CDC 94166-101 (3)
57	ESDI	967	7	34	—	967	112.4	CDC 94166-141 (3)
58	ESDI	967	9	34	—	967	144.5	CDC 94166-182 (3)
59	AT	980	5	17	—	979	40.7	Conner CP-344
60	AT	776	8	33	—	775	100	Conner CP-3104
61	AT	745	4	28	—	744	40.5	Mini 8051A native mode
62	AT	965	5	17	—	Auto	40	Quantum 40AT (6)
63	AT	965	10	17	—	Auto	80	Quantum pro 80AT (6)
64-255								None

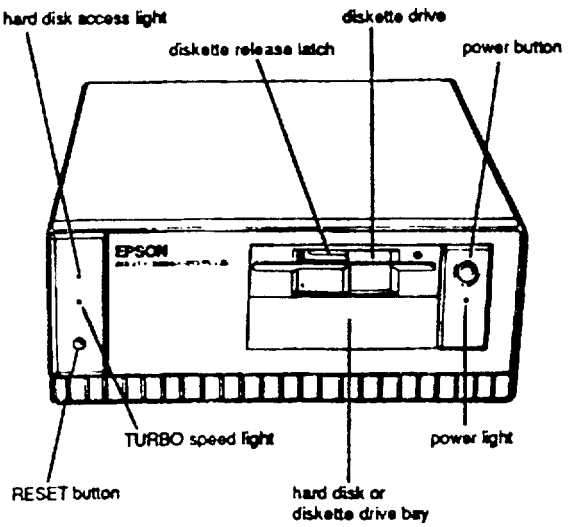
Notes:

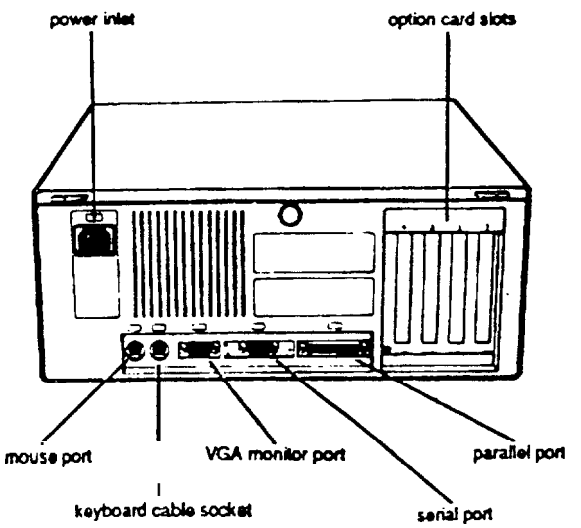
1. Miniscribe 8425F, Seagate ST125
2. Conner CP-3044 or Miniscribe 8051A can be used as type 17
3. For Western Digital ESDI HDC or Drive Maker default setting
4. Micropolis 1325, Ataal 3085, Lanstor Lan64, Maxtor XT1085, Newbury NDR1085
5. Micropolis 1323A, Miniscribe 3035, Microscience HH1050, Seagate ST4053
6. The landing zone value is 964
7. The factory-installed hard disk drive type for the Equity 386SX/20 PLUS is number 60 (100MB).

Installation / Support Tips

Power

The Equity 386SX/20 PLUS has a power supply that is switchable between 115V, for USA and Canadian use, and 230V, for use in other countries. There is no manual switch, as the power supply is autosensing.





Mouse and Keyboard

- When attaching the mouse and keyboard connectors, be careful to attach them to the proper connectors. Although they are physically identical, they are not interchangeable.

Installing Floppy Disk Drives

- When installing a floppy disk drive as drive B, remember to set the drive select jumper to the second position and attach the pass-through connector on the floppy drive controller cable to the drive, not to the end connector.
- If the drive does not function normally, make sure that the drive type has been correctly selected in SETUP. Also check that any special drivers that may be necessary have been installed correctly.
- If you have installed two floppy disk drives, remember that the Equity 386SX/20 PLUS will boot from drive B when a disk is inserted in drive B and no disk is inserted in drive A.

Installing Hard Disk Drives

- It is recommended that a 16-bit AT-type hard disk controller be used in the Equity 386SX/20 PLUS, if you are installing a drive that cannot make use of the internal hard disk controller. Also remember to disable the onboard hard disk controller when installing such a drive.
- If you are having difficulty in formatting the hard disk drive, try starting over with the Unconditional Format option in diagnostics.

Setup

- When installing a hard disk drive, be sure to consult the drive type tables for the drive type which fits the drive you are installing. If there is no match for your drive, use the User Defined drive option.

Software Problems

- When installing a copy-protected software package on the Equity 386SX/20 PLUS, first try the installation at 20MHz. If this does not work properly, try switching to 8MHz for the installation If you are still unable to load the program at 20MHz, try loading at 8MHz and then switching to 20MHz.
- When using a software package that uses a keydisk as its copy-protection method, try loading it at 20MHz. If this does not work, enable the Auto Speed option in SETUP.

Power-on Password

- Make sure that you do not forget the Power-on Password should you set one up. If you do, it will be necessary to disable it by moving jumper J3 on the main circuit board to the A position.

Information Reference List

Engineering Change Notices

None.

Technical Information Bulletins

None.

Product Support Bulletins

None.

Related Documentation

TM-38620SX+	Equity 386SX/20 PLUS Service Manual
PL-38620SX+	Equity 386SX/20 PLUS Parts List
Y72399100100	Equity 386SX/20 PLUS User s Guide